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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,806	03/09/2004	James H. Mabe	7784-000704US	2080

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
WILLIAMS, MARK A	
ART UNIT	**PAPER NUMBER**
3676	

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/796,806	MABE, JAMES H.	
	Examiner	Art Unit	
	Mark A. Williams	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 35-45 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 35-45 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 35-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "the piano hinge leaves do not pivot about the SMA pin but pivot when a torque is applied" is not fully understood. It is unclear how this can occur, since even when the hinge pin twist to cause pivoting, the leaves would seem to pivot about the pin.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 35 and 36, as best understood, are rejected under 35 U.S.C. 102(b) as being anticiapted by Japanese Patent JP 408228910 A ('910). A hinge apparatus comprising a hinge pin 7 formed of a two-way shape memory alloy (SMA) adapted to transition, without an externally applied load, between a first trained shape and a second trained shape upon switching the two-way SMA between a first state and a second state, wherein switching the two-way SMA from the first state to the second state causes the hinge apparatus to apply an opening force to a device coupled to the hinge apparatus, and wherein switching the two-way SMA from the second state to the first state causes the hinge apparatus to apply a closing force to the device coupled to the hinge apparatus. First and second states of austenitic state and martensitic states, responsive to temperature as claimed, are inherent to the design, as known in the art. Twisting of the pin as claimed would inherently occur. Member 2 is broadly considered a door. The device could be formed by thermal cycling, as claimed. The device can be broadly considered a piano hinge. A key-spline arrangement rigidly securing the two-way shape memory alloy to the hinge leafs for transfer of torque from the two-way SMA. The ends of the pin including tabs for transferring torque, as claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 41-43, and 45, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent JP 408228910 A ('910). Patent '910 discloses the claimed invention except for the SMA material being NiTinol. It is known in the art of shape memory alloys to use such material as NiTinol to achieve desire results, as evidenced by Perret, Jr., US Patent 5,617,377. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device in this way, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v. Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331. Such a modification is not critical to the design and would have produced no unexpected results.

Claims 37-40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent JP 408228910 A ('910). Patent '910 discloses the claimed

invention except for the particular range of cycling. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device in such a way, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Such a modification would solve no stated problem and would have produced no unexpected results.

Response to Arguments

5. Applicant's arguments filed 9/6/05 have been fully considered but they are not persuasive.

Applicant argues that '910 does not apply a torque in both an opening and closing direction. It is the position of the examiner that such a condition would obviously occur in '910 because of the inherent nature of SMA material. The material would twist from an original state once actuated by a temperature change, thereby causing pivoting of the hinge; then once returned back to its original temperature range, the material would twist back to its original state, thus pivoting in the hinge in the opposite direction.

Applicant argues that it would not be obvious to rigidly secure each end portion of the pin of '910 to each hinge leaf, since doing so would prevent the hinge from pivoting and would be counter-intuitive to the purposes of a conventional hinge. It is submitted that '910 is not a conventional hinge, and appears to work in the identical manner of the current invention. The term "rigid" is considered a broad term; therefor, in a broad since, the pin is rigidly secured in the '910 patent, as claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will

be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Williams whose telephone number is (571) 272-7064. The examiner can normally be reached on Monday through Friday.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Williams
11/23/05

BRIAN E. GLESSNER
SUPERVISORY PATENT EXAMINER